

Significant Analysis
For Long Term 1 Enhanced Surface Water Rule Concerning Treatment of
Surface Water Sources Used for Drinking Water and Arsenic / Source
Monitoring Clarifications
Chapter 246-290 WAC

Briefly describe the proposed rule.

The proposed rule incorporates revisions made by the U.S. Environmental Protection Agency (EPA) as well as changes to state regulations that are not included in EPA rule.

Long Term 1 Enhanced Surface Water Rule

Washington State has had requirements for the protection and treatment of water used as public drinking sources for several decades. As more information has become available about the types of diseases that can be spread by drinking water and the controls necessary to prevent such spread, both the state and federal governments have imposed more requirements on water systems to provide the public with better protection against such diseases.

The latest changes to those requirements came January 14, 2002 when the EPA adopted the Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) as 40 Code of Federal Regulation (CFR) 141, Subpart T. The LT1ESWTR strengthens the requirements for water systems using surface water such as streams, lakes, and reservoirs, that serve fewer than 10,000 people. This rule is similar to the Interim Enhanced Surface Water Treatment Rule previously adopted for large systems serving 10,000 or more people, which is designed to provide the public with increased protection against a microorganism called *Cryptosporidium*. This organism is found in some surface waters and can cause severe diarrhea, nausea, and vomiting.

Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring

Arsenic has been considered a contaminant when found in drinking water since the early 1940's. The recommended maximum contaminant level (MCL) of arsenic in drinking water listed by the Public Health Service in 1942 was 0.05 mg/L (milligrams per liter) or 50 parts per billion (ppb.) The standard was adopted into the CFR by the EPA based on direction in the Safe Drinking Water Act (SDWA) that was adopted in 1974. The State of Washington included the 0.05 mg/L (50 ppb) standard as the MCL for drinking water in the 1978 edition of the State Board of Health (SBOH) rules, Chapter 245-54 Public Water Supplies.

Since the original standard was set, considerable information has been gathered through major studies, including those conducted by the federal government, on the health effects of arsenic in drinking water. Based on this information, chronic exposure to arsenic has

been reported to cause more than 30 different adverse health effects including: cardiovascular disease, diabetes mellitus, skin changes, nervous system damage, and various forms of cancer. Short-term exposure to high doses of arsenic can cause acute adverse health effects.

In 1996, Congress amended and reauthorized the federal SDWA. The amendments to the SDWA specified that EPA review the MCL for arsenic to consider the new information. A March 1999 report by the National Academy of Sciences concluded that the 0.05 mg/L (50 ppb) standard does not achieve EPA's goal of protecting public health and should be lowered as soon as possible. In January 2001, the federal government adopted a lower arsenic MCL of 0.01 mg/L (10 ppb), for Group A community and non-transient non-community water systems. This rule revision also included clarifications to source monitoring requirements. The arsenic MCL portion of the final rule was withdrawn for further review in March 2001 and then confirmed as the final standard in October 2001. EPA then revised the arsenic MCL to 0.010 mg/L in March 2003 to clarify the way the MCL is expressed in the federal regulatory text. EPA is using its discretionary authority under the 1996 amendments to the SDWA to set the standard at a level that "maximizes health risk reduction benefits at a cost that is justified by the benefits."

Is a Significant Analysis required for this rule?

Long Term 1 Enhanced Surface Water Rule

No. The proposal has been reviewed and the determination made that no significant analysis is required as specified in RCW 34.05.328(5)(b)(iii). These proposed changes adopt federal regulations by reference without material change.

Arsenic / Source Monitoring Clarifications

There is one modification in the proposal that requires a significant analysis. This modification removes the current arsenic MCL of 0.05 mg/L (50 ppb) for transient non-community (TNC) water systems to be consistent with the EPA rule.

For all other changes, the proposal has been reviewed and the determination made that no significant analysis is required. These proposed changes adopt federal regulations by reference without material change. The exception rule changes are as follows:

1. Lowers the arsenic MCL for Group A community and non-transient non-community water systems to 0.010 mg/L (10 ppb);
2. Establishes a timeframe regarding when the lowered MCL applies for the purpose of compliance for new sources and new systems to be brought on line;
3. Establishes when the lowered MCL applies for the purpose of compliance to existing sources and existing systems; and
4. Modifies the calculation for determining when a system violates the MCL for synthetic organic chemicals and volatile organic chemicals from a single sample with a confirmation sample to a running annual average.

Of note, there is one rule revision in this proposal for arsenic that is considered an exception rule change even though it is not included in the federal regulation. This change is the modification to the calculation of an MCL violation for inorganic chemicals, which is proposed at the direction of EPA. The EPA indicated in their rule implementation guidance that they intended to modify the calculation for inorganic chemical contaminants to match the changes made for the synthetic organic chemical and volatile organic chemical MCL violation calculation. EPA failed to include the modification to the MCL violation calculation in their final rule due to an oversight. Their guidance indicates that they intend to enforce the rule as if this change is in the federal rule. The proposed modification changes the calculation from the result of either a single sample or the average of a single sample and a confirmation sample to a running annual average as shown in item four above. The modification considers the water quality provided over a one-year period, which is more consistent with the fact that all of the inorganic chemical contaminants are regulated based on chronic exposure.

A. Clearly state in detail the general goals and specific objectives of the statute that the rule implements.

RCW 43.20.050 empowers the SBOH to adopt rules necessary to assure safe and reliable public drinking water and to protect public health. The Washington State Department of Health (DOH) administers these rules. RCW 70.119A.080 states “The department shall administer a drinking water program which includes, but is not limited to, those program elements necessary to assume primary enforcement responsibility for part B, and section 1428 of part C of the federal safe drinking water act.” The proposed revisions make chapter 246-290 WAC consistent with the revised CFR and satisfies Washington state laws.

B. Determine that the rule is needed to achieve these goals and objectives, and analyze alternatives to rulemaking and the consequences of not adopting the rule.

The primacy agreement between the DOH and the EPA outlines a number of required activities for the department to maintain regulatory primacy over the SDWA in the regulation of Group A public water systems. One of these activities involves rule adoption for consistency with the federal rules. In order to be consistent and fulfill primacy agreement requirements, there are no alternatives to rulemaking and the SBOH regulations must be modified to incorporate the federal revisions. The public health objectives of the rule revision are to:

1. Increase protection against *Cryptosporidium*;
2. Strengthen protection against the adverse health effects of long-term chronic exposure to arsenic;
3. Revise the method for determining whether a system only exceeds an MCL or actually violates the MCL; and

4. Clarify current rule language.

C. Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented.

Most of the rule revisions in this proposal are being adopted under the exception rule process because they adopt federal rules without material change. These changes are listed under the question regarding whether a significant analysis is required and are not covered here. The sole focus of the following analysis is the modification that removes the arsenic MCL of 0.05 mg/L (50 ppb) for TNC water systems.

Arsenic Description:

In the current rule, TNC systems are required to monitor the level of arsenic in their water one time, at source or system approval. Monitoring takes place before the system serves water to the public and the result is submitted with construction documents to the department for approval. Treatment or other means of reducing arsenic is required to lower arsenic to less than 0.05 mg/L (50 ppb) if the test results are above this MCL.

The proposed rule revision does not apply the existing (0.05 mg/L or 50 ppb) or lowered (0.010 mg/L or 10 ppb) arsenic MCL to TNC water systems. The proposed rule still requires that these systems test for arsenic and submit the results during the approval process. If the test results are elevated, the department can take either: (1) informal action, i.e. notification and education or (2) formal action on a case-by-case basis for extremely high levels known to cause acute health effects.

Analysis:

Arsenic historically detected in drinking water systems in Washington State is considered a chronic contaminant. Based on historic information, it is unlikely that the level of arsenic found in a drinking water system would be at a level to cause acute health effects. The current MCL of 0.05 mg/L (50 ppb) and the health effects associated with consuming water above the MCL are based on a lifetime of consuming water of that quality. While a small percentage of TNC system users consume water from these systems on a regular basis, typical consumers rarely visit the same system more than 10 times per year according to information in the EPA Economic Analysis for the Arsenic in Drinking Water Rule. Based on that assessment and the chronic nature of arsenic, EPA chose not to regulate TNC systems for arsenic. Therefore, the department has determined that there is not a significant health risk by eliminating the arsenic MCL for TNC systems.

The current regulations have a potentially significant cost associated with the requirement to reduce the level of arsenic in drinking water for all Group A systems, including TNC systems. The proposed rule would remove the cost burden for TNC systems by not applying the arsenic MCL to those systems. Leaving the requirement for an initial

sample for arsenic during source or system approval will allow the department to provide education and training to the purveyors of TNC systems whose arsenic exceeds the new 0.010 mg/L (10 ppb) standard that applies to the Group A community and non-transient non-community systems. The monitoring requirement also provides the information necessary for the department to be more proactive in the rare event of extremely elevated arsenic levels that pose an acute health risk. Because the proposed rule will continue to protect public health, but at lower cost for the regulated community, the likely benefits of the proposed rule outweigh the likely costs.

D. Determine, after considering alternative versions of the rule, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated previously.

DOH staff worked closely with the SBOH, constituents and the public to minimize the burden of this rule. These efforts have included three public forums held in different locations around the state, presentations made to the Water Supply Advisory Committee, Washington Water Utility Council, Environmental Health Association annual conference, and the Environmental Health Directors for local health jurisdictions. In addition, information was provided in the Office of Drinking Water newsletter, Water Tap, and on the office's web site. In the course of these and other efforts, the following alternative versions of the rule were considered:

Alternative version #1:

Applying EPA's lower arsenic MCL of 0.010 mg/L (10 ppb) to TNC systems at the time of source or system approval was considered.

The proposed rule is less burdensome for the TNC water systems compared to this alternative version while achieving the general goals and specific objectives of the statute. Applying a lower MCL would result in more systems being out of compliance with the rule, which would require installation of treatment or other means of reducing arsenic at a significant cost to the purveyor.

Alternative version #2:

Keeping the existing arsenic MCL of 0.05 mg/L (50 ppb) for TNC systems at the time of source or system approval was considered.

Compared to this alternative version, the proposed rule is less costly for the TNC water systems. Applying any standard would result in more systems being out of compliance with the rule, which would require TNC systems to install treatment or other means of reducing arsenic at a significant cost to the purveyor. Not applying the arsenic MCL relieves that burden while achieving the general goals and specific objectives of the statute.

E. Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

The rule does not require those to whom it applies to take an action that violates requirements of federal or state law.

F. Determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.

The rule does not impose more stringent performance requirements on private entities than on public entities.

G. Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter and, if so, determine that the difference is justified by an explicit state statute or by substantial evidence that the difference is necessary.

The rule is consistent with all applicable federal regulations or statutes.

H. Demonstrate that the rule has been coordinated, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.

Yes, the rule is coordinated to the maximum extent practicable with other applicable laws, including the Federal Safe Drinking Water Act and associated Code of Federal Regulations.